SUPPLEMENT
TO THE
British Medical Journal

LONDON: DECEMBER 20TH, 1890.

A WEEKLY EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(327) Pneumonia Successfully Treated by Continuous Inhalation of Oxygen.

A REMARKABLE case of pneumonia successfully treated by continuous inhalation of oxygen is reported by Dr. A. N. Blodgett (*Boston Medical and Surgical Journal*, No. 21, 1890). The patient was a lady, aged 37, of neurotic tendencies, who suffered at first from ordinary lobar pneumonia at the base of the right lung. The general symptoms were very strongly marked, and after the first few days of ordinary treatment the disease spread to the upper part of the same lung, and alarming and excessive dyspnœa set in rather rapidly. Energetic stimulation and counter-irritation appeared to relieve the condition to some extent, but it recurred, and showed itself less amenable to treatment. Inhalations of oxygen were given, the gas being simply conducted to the patient's mouth after having been passed through a wash bottle and diluted with 10 per cent. of nitrous oxide. Very decided relief was given for a short time, but again and again the dyspnœa returned, each time being staved off by the inhalation. At last it became necessary to keep up constant inhalation. The supply of gas began to fail, and before a fresh store could be obtained the patient was moribund. The gas was then given by means of artificial respiration, and the patient rallied once more. Constant inhalation was then kept up for 106 hours without intermission, and at the end of that time the breathing was easy and natural, and complete recovery followed without further incident. The temperature fell during the long continued inhalation, the average amount of gas being 200 gallons in each twenty-four hours. Dr. Blodgett states that the effect of the gas was "almost as pronounced and evident as is that of a ligature in hæmorrhage."

(328) Progressive Paralysis.

PICK (*Neurologisches Centralblatt*, November 15th, 1890) gives an account of the histology of progressive paralysis. In the brain, which has been hardened in alcohol, he finds, on microscopical examination of the cerebral cortex, a number of elongated dark bodies, which take the stain well, and are, for the most part, so placed that their long axis is at right angles to the cerebral cortex. These, at first sight, are very liable to be mistaken for the nuclei of the vessels, but further careful consideration shows that their direction is too constant, their size too great, and their staining too deep. Higher magnifying power shows that they are really swellings on the axis cylinders of the nerve cells; they are for the most part placed on the nerve fibre at a point near the cell. These swellings discovered by Pick accord with the changes which other authors have described as likely to be met with in the brain of persons dying of progressive paralysis. They are probably to be regarded as the first stage of sclerosis.

(329) Primary Malignant Tumours of the Anterior Mediastinum.

M. LETULLE relates (*Arch. Gén. de Méd.*, December, 1890), eight cases of primary malignant growth of the anterior mediastinum. The patients were all over 40, with the single exception of a woman aged 23—a very acute case of carcinoma. Two were over 60. The history of illness dated from not more than six months. The disease was accompanied by pleural effusion in four cases, purulent in one, and chylous in another. The fluid in the latter case was like sero-pus, but under the microscope many fat globules and very few pus cells were seen. There was no fever. Œdema of the parts above the diaphragm was present in four cases, twice on both sides. One patient had hæmoptysis twice. There was a slight bulging with pulsation to the right of the sternum in one case, and a small tumour in the first left interspace in another. Four of the patients died suddenly. Whatever their structure, these growths have certain fundamental characters:—(1). Their primary localisation in the upper part of the anterior mediastinum. (2). Their spread downwards and in front of the pericardium. (3). The lungs and heart are pushed away excentrically, this being often accompanied by infiltration of the new growth on one side or the other. (4). The invasion of the mediastinal pleura always from above and near the gland. The growth in two cases was lymphadenoma; in three others sarcoma, one of which the author names "trabecular lympho-sarcoma," to denote certain peculiarities of structure. Two others were carcinoma—one being a squamous epithelioma. The last was a mixed growth, namely, a round-celled sarcoma, with parts here and there bearing the structure of carcinoma. This polymorphism is a great argument in favour of the glandular origin of these tumours. The thymus gland is developed from a diverticulum from the front part of the third branchial cleft. With an embryo 18 millimètres long, the upper part is already grouped in lymphoid masses with round cells; the lower part, corresponding to the upper part of the mediastinum, is still made up of layers of cells clearly epithelial. Thus the thymus may serve as the starting point of carcinoma, and thus it appears reasonable to accept primary carcinoma of the anterior mediastinum—that is, of the thymus gland—as readily as lymphadenoma or sarcoma. With the exception of tumours formed of a number of individual glands, it may therefore be concluded that

primary malignant growths of the anterior mediastinum take their origin from the thymus gland.

(330) Chlorosis late in Life.

Dr. Paul Chéron (*Union Médicale*, December 9th, 1890), in a paper on chlorosis, speaks of the *chlorose tardive* of Hayem. It appears about the age of 28 or 30, often in women who have never suffered from chlorosis in early girlhood, although Dr. Chéron is careful to add that it is hard to prove that the disease may not represent a recurrence of the usual form, set up by some shock or cause of debility. Thus chlorotic young girls often bear pregnancy well, yet, after cure, bad labours and prolonged suckling are well known to prove very prejudicial to such subjects. Pure chlorosis, occurring for the first time at about the age of 30, appears to be unknown in men. True chlorosis of the menopause is another remarkable complaint, not to be confounded with pallor resulting from menorrhagia so frequent at that time of life. It is seen in its most perfect form when a woman, who has profusely menstruated for a few years without being chlorotic, reaches the menopause and then develops chlorosis after the complete cessation of the menses. There is nearly always dyspepsia, with tympanites, constipation, nervousness, and irritability. In three instances M. Hayem observed induration of portions of the mammary glandular tissue, with slight enlargement of the axillary glands. The suspicions which such a remarkable symptom might excite are evident. The induration of the breast disappeared in a few months. Late chlorosis is not so liable to recur as is the commoner form. Whilst in youth the pallor often continues after disappearance of the other ordinary symptoms, in the form under consideration the dyspepsia often lasts long after the anæmia.

SURGERY.

(331) Laparotomy in a Case of Perforating Ulcer of the Stomach.

At a recent meeting of the Société Anatomique of Paris, M. Hélary, of the St. Antoine Hospital, presented a specimen taken from a case of suppurative peritonitis due to a perforating gastric ulcer, in which no symptoms of such affection of the stomach had been observed during life (*Bulletins de la Société Anatomique de Paris*, Octobre. Fascicule, No. 17). Laparotomy had been performed by M. Walther, who, after a description of the case by M. Hélary, directed attention to the most prominent points of interest. The patient, a young woman, aged 17, had, three days before admission, been suddenly seized without any apparent cause with symptoms of acute diffused peritonitis. The extreme distension of the abdomen prevented a satisfactory exploration; but vaginal examination, together with abdominal palpation, enabled M. Walther to determine the existence of a collection of fluid in the left side of the pelvis. Notwithstanding the unfavourable condition of the patient, laparotomy was at once performed. The pelvic cavity contained a great quantity of purulent fluid, and the surface of the intestines was covered by thick and adherent false membrane. The uterus and its appendages were quite sound. A large accumulation of pus around the cæcum seemed to indicate a perforation in this portion of the intestinal canal. The appendix vermiformis was removed, but on subsequent examination no trace of perforation could be seen. The lesions were much less severe in the upper part of the abdominal cavity, the purulent exudation being less abundant there. The peritoneal cavity was washed out very freely with boiled water. The patient died eight hours after the operation. At the necropsy it was found that the starting point of the peritonitis had been a perforating ulcer in the anterior wall of the stomach. In the epigastric region, however, and around the seat of the perforation, there was no collection of pus, and no false membrane, but simply slight recent adhesions between the front of the stomach and the liver, and the adjacent loops of intestine. The localisation of the most severe lesions in the pelvis and the lower part of the abdomen was doubtless due to an immediate descent of the contents of the stomach into the pelvis at the time of the perforation. The simple passage of the effused material had caused merely an adhesive form of peritonitis, whilst its stagnation below had set up the suppurative and more intense form of inflammation. M. Walther referred to another case of similar clinical history under his own care, and pointed out the importance of these two cases from a diagnostic point of view. Each proved the impossibility of recognising at the bedside the origin of such a morbid condition, and particularly the difficulty of determining the starting point of the inflammation even in the course of a laparotomy. It was held to be very improbable that under like circumstances any surgeon would, after having cleared away large purulent collections in the lower part of the abdomen, venture to explore the regions above the umbilicus, and to break down adhesions which might seem well adapted to protect the superior zone of the peritoneal cavity.

(332) Operative Treatment of Pott's Disease.

M. Chipault (*Arch. Gén. de Méd.*, December, 1890), after giving the records of 35 cases of Pott's disease of the spine treated surgically, goes on to discuss the method of operating. An abscess often determines the incision. To lay bare the posterior arch the incision is usually made over the spinous processes, and the aponeurosis and muscles on either side are turned back. In opening the spinal canal, the trephine, saw, or cutting bone forceps may be used. With the latter there is less danger of wounding the dura mater. Of course the pieces of bone cannot be put back, but if resection is done subperiosteally, perhaps this is not altogether necessary. The number of laminæ removed depends on the extent (1) of the curvature (2), of the compression as learnt from the clinical diagnosis. If there is a posterior pachymeningitis, the granulations must be scraped away. The dura mater must be opened according to Horsley's directions, and the cord can be examined with the finger. There are inconveniences in the drainage tube. Later a jacket is put on. Results:—Out of 35 cases 20 were improved or definitively cured. Progress towards recovery went on slowly and continuously. Sensation reappeared first from above downwards; motion later and from below upwards. The sphincters recovered early. If recovery is interrupted before the wound has closed, there is fear of meningitis. Cases may be unsuccessful as regards recovery of function. They are of two kinds: (1) the patient improves at first and then falls back (2), the patient does not improve at all—here either the opening into the canal has been insufficient or the changes in the cord are too advanced. The patient may die (1), from the operation (2), from pulmonary or generalised tuberculosis (3), from the spinal lesion. Even grave and long-standing spinal disease may be recovered from. The prognosis is better in children. It depends also on the nature, seat, and extent of the lesion. When the disease is in the posterior arch, operation should be undertaken with two objects (1), to remove a focus

of tuberculous disease (2), to relieve the cord. If there is no bone disease but a posterior pachymeningitis, diagnosis is difficult. It is made as in cases of spinal tumour. When the body of the vertebra is involved and the cord compressed by an anterior pachymeningitis only one object can be attained, viz., relief from pressure. Here the operation should be done only in severe cases, viz. (1), in sudden compression of the cord when there must be no delay (2), in chronic lesions slowly tending to a fatal end provided there is no advanced visceral disease. If the bodies of the lumbar vertebræ are affected, it might be possible to get away the disease from the front. The author thinks that the effect of Koch's discovery will be to give to those who have been through this new treatment a greater benefit from surgical interference.

(333) Removal of a Needle from the Knee, after Localisation by Means of Magnetism.

In a paper communicated to the Société Médicale de Genève, and published in the *Revue Médicale de la Suisse Romande* for October, Dr. E. Kummer records a case in which he successfully removed a portion of a sewing needle from the knee, after having determined its presence there, and made out its length and position, first by the galvanometer and afterwards by a freshly-magnetised needle. The foreign body was found between the fibrous capsule and the synovial membrane. Although it had not penetrated into the cavity of the joint, the synovial membrane was found to be red and swollen, and some blood-stained synovia flowed away through the wound. In his comments on this case Dr. Kummer stated that, although a needle, when at rest in the tissues, seldom produces any reaction, it is liable to set up some local mischief when inserted in parts which, like the hand and knee, are in very frequent movement. There is always a tendency for a foreign body of this kind to travel, and thus it may pass from a part of the body where there is not very frequent disturbance to the neighbourhood of some important and frequently used joint. Moreover, as has been proved by cases under the care of Kocher and other surgeons, a portion of needle inserted in a limb may, even though no local inflammatory reaction be set up, cause very troublesome neuralgic pains through peripheral irritation. For these reasons, it is held, the surgeon should make it a rule always to remove any needle, or portion of needle, inserted into the body.

MIDWIFERY AND DISEASES OF WOMEN.

(334) Toxic Power of the Urine during Pregnancy.

Drs. Laulanié and Chambrelent have carried out experiments (*Annales de Gynécologie*, October, 1890) to determine the toxicity of the urine during pregnancy. According to M. Bouchard, the mean toxic power of the urine in the non-gravid state is 45 cubic centimètres per kilogramme of the animal, that is to say, it is necessary as a rule to inject 45 cubic centimètres of urine from a healthy person per kilogramme of the animal in order to kill a rabbit. While 45 cubic centimètres are taken as a mean, the limits are found to extend from 30 to 60 cubic centimètres. In making their injections the authors were careful to see that the chemical reactions of the urine employed were normal, that the woman from whom the urine was taken was healthy, and that the specimen of urine injected into the rabbit was taken from the total collection of twenty-four hours. The conclusions arrived at were as follows:—That under the influence of pregnancy the degree of toxic power of the urine is markedly lessened, and, as a consequence, that the organism of the pregnant woman at the termination of gravidity must be more or less saturated with toxic material.

(335) Severe Hæmorrhage from Cauterisation of the Vagina.

Dr. A. Bétrix (*Der Frauenarzt*, October, 1890) relates an instructive case which proves that, in all cases of hæmorrhage from the genital canal, the physician must not be in a hurry to conclude that the blood comes from the uterus. He was called up early one morning to a woman aged 30, the mother of three children. She was bleeding very freely from the vulva, the hæmorrhage having commenced the previous day. Large clots had come away. No trace of a fœtus or of fœtal membranes could be found, the uterus was normal, no deposit or solid body could be felt in the region of the ovaries or in Douglas's pouch. The vagina was freely syringed, and in the midst of the detached clots were two fœtid sloughs; the largest was five inches long. It then appeared that the patient had suffered from rigors during the night. The vagina was washed out with a 1 in 3,000 solution of sublimate, and plugged with iodoform gauze. There was fever for several days. Dr. Bétrix at length found out the cause of the sloughing from the vagina. A week before the attack of hæmorrhage, the patient found that her period continued longer than usual and, on the recommendation of a friend, she passed into the vagina a large tampon soaked in "eau de Rabel," which contains one part of pure sulphuric acid and three of absolute alcohol. She was obliged to pull it out again in five minutes, as it caused severe pain. From then till the attack of hæmorrhage, the patient felt no kind of suffering or inconvenience. She ultimately recovered, with a large vaginal cicatrix, yet without marked contraction of the vaginal canal. In a similar case, Dr. Bétrix adds, the patient might be pregnant, and if the vaginal injury were overlooked, a second accident might result through tampering with the uterus.

(336) Hydatid Mole; Albuminuria; Death.

Dr. Buscarlet, of the Hôpital Necker (*Archives de Tocologie*, November, 1890), states that on August 25th a woman, aged 23, was sent into the hospital by a physician, whose diagnosis was "albuminuric ascites." Severe flooding set in soon after admission. Her abdomen was greatly distended, and prominent anteriorly, as in tumours of the ovary or uterus. On digital exploration, the cervix felt soft, but not shortened; the finger could be passed into the uterine cavity, and a firm, soft substance like placenta could be felt. No clot or *débris* came away on the exploring finger, and an injection of very hot water stopped the hæmorrhage. The abdominal swelling proved to be the uterus; the fundus reached two or three fingers' breadth above the navel. It was tense and firm; nothing like a fœtus could be felt, nor could any fœtal heart sounds be heard. The vagina was not plugged. The patient stated that she had already been twice pregnant, the last pregnancy ending eighteen months previously. She declared that the abdominal swelling had commenced only a fortnight before admission. The period had never ceased, indeed menorrhagia had set in and lasted for a month. Her physician detected albumen in the urine. The breasts had enlarged, and colostrum issued from the nipples, which had undergone the characteristic changes observed in pregnancy. Dr. Buscarlet found the urine loaded with albumen. On the evening after admission, the patient suddenly lost consciousness, became deadly cold, and died in

spite of repeated injections of ether, without any renewal of the flooding. A necropsy was performed on the next day. The uterus was enlarged, as at a normal seven months' pregnancy. On laying open the uterine wall, a layer of old and recent clot was found; the whole of the cavity was stuffed with little vesicular bodies, the result of hydatidiform degeneration of the chorion. The mole weighed over three pounds. No trace of fœtus, amniotic cavity, or true placenta could be found. The inner aspect of the uterus was lined with degenerate decidua, greatly thickened at certain points. Each ovary was of the size of a large orange, and had undergone multilocular cystic degeneration. The kidneys were of the "large white" type, and extremely diseased. There was no ascites, nor blood in the peritoneal cavity. The heart weighed nearly 10 ounces and was healthy, so were the lungs. The patient's death was probably as much due to the renal disease as to the repeated hæmorrhages. Subcutaneous injections of ergotine had been given by her physician. Earlier diagnosis and clearing out the uterus might have saved her.

(337) Placenta Prævia: Suppuration of the Pubic Symphysis.

LENNANDER, of Upsala (*Nouvelles Archives d'Obstét et de Gynéc.*, October, 1890), describes three cases of placenta prævia, one followed by a formidable complication. A woman who had borne two children had lateral placenta prævia at her third labour. The orifice of the cervix was wide enough to admit several fingers. Podalic version and immediate extraction was practised. During the puerperium, fever with pain in the region of the symphysis set in. The linea alba immediately above the pubes was incised, and an abscess the size of a child's head was thus opened. It contained pus of a penetrating odour. The symphysis parted, and pieces of bone and interarticular cartilage came away. Dr. Lennander did not feel certain whether the parting of the symphysis was the result of the suppuration or had developed during delivery, an abscess forming subsequently. The sacro-iliac synchondroses remained unaffected. The symphysis pubis united again during convalescence.

(338) Gonorrhœa in the Female and Galvanism.

PROCHOWNICK (*Münchener med. Wochenschrift*, No. 27, 1890) tested the antimycotic action of the positive pole of the galvanic current in cases of gonorrhœa in women. The pole was introduced into the uterus, and a current up to 120 milliampères was used for not longer than ten minutes. The cervical discharge before the treatment contained gonococci; after five sittings they disappeared, and after six or seven the discharge became thin and watery. The female urethra cannot tolerate a current over 40 milliampères, which would be too weak to destroy the specific germs.

(339) Uterine Fibroid Disease and Pregnancy.

DR. PESTALOZZA (*Annali di Ostet. e Gynec.*, September, 1890) associates "fibroids" with sterility, not through any special physiological influence, but rather through the frequency of metrorrhagia and uterine leucorrhœa as complications, and through the deformity of the uterine cavity, which is often rendered physically incapable of containing a fœtus. Endometritis is frequent, and may cause closure of the uterine end of the tube through swelling of the mucous membrane; even the mildest forms possibly damage the delicate cilia of the epithelium, and thus prevent the due transference of the ovum. Large fibroids set up peritonitis, and even ascites, and damage the ovaries by pressure or congestion. Should pregnancy take place in a patient suffering from fibroid, the further the tumour lies from the uterine cavity the less will be the chances of abortion. The tumour may directly or indirectly cause faulty insertion of the placenta, extrauterine pregnancy, eclampsia, mechanical albuminuria, and nephritis by vascular stasis. Retroversion of a gravid uterus affected with fibroid is very serious. During labour interstitial fibroids seriously interfere with uterine contraction, and favour *post-partum* hæmorrhage. Cases have been recorded where a fibroid has disappeared during convalescence from childbed, undergoing involution in company with the normal uterine tissue. Hysterectomy and myomotomy during pregnancy are dangerous. The induction of premature labour is sometimes justifiable. During labour embryotomy, or Cæsarean section, or Porro's operation may prove necessary.

PHARMACOLOGY AND THERAPEUTICS.

(340) Koch's Treatment of Tuberculosis.

DR. SAUNDBY, Dr. R. M. SIMON, and Mr. GILBERT BARLING were among the earliest visitors to Berlin after the publication of Professor Koch's paper, and they give the result of their observations in the December number of the *Birmingham Medical Review*. In the main their statements as to the details of the treatment and its immediate local and constitutional effects agree with those of other witnesses. Many of their remarks, however, have a special value as conveying the personal impressions of particularly competent observers. The weak point of the treatment seems to them to lie in the fact that in many cases of tuberculosis of internal organs surgical interference for the removal of the necrosed tubercle with its still living bacilli is impossible. Under such circumstances, the authors say anxiety cannot but be felt as to the future immunity of patients, and observations directed to the fate of the bacilli in the reported cases will be looked for with eager interest. On *a priori* grounds they do not think it unlikely that injections from time to time of a fluid which has the power of killing tuberculous tissue may, by preventing the development of the pabulum necessary for the wellbeing of the bacillus, prevent its multiplication and so lower its nutrition that the vitality of the living tissues will be sufficient to oppose a complete barrier to its further development. They had an opportunity of watching the treatment of a number of cases of laryngeal and pulmonary phthisis under the care of Professors Fraentzel and Senator in the Charité Hospital, under Professor Ewald in the Augusta Hospital, and under Dr. A. Levy at his private Klinik. They saw no case that could be regarded as cured, and in some improvement was doubtful, but others expressed themselves as feeling decidedly better, and there was evidence of this in the cessation of night sweats, diminished cough and expectoration, and increase of weight. They point out that it is common in cases of phthisis for the patients to lose weight in the early stages of the treatment, but this loss is more than made good later on. With regard to lupus, the authors say that whatever may be the future fate of the patients whom they saw, there could be no doubt that at the time they were remarkably improved, and in some cases no active disease could be detected. In tuberculosis of lymphatic glands they were also able to observe considerable improvement, the glands becoming undoubtedly reduced in size after the reaction had subsided. With regard to joint disease, they saw instances in which there had evidently

been distinct improvement in the condition of the affected joint, but none in which a cure had been effected. They were shown one case of hip-joint disease in a child in which the disease was said to have entirely receded. They sum up the results of their careful observations as follows:—"(1) The subcutaneous injection of Koch's fluid is followed by a specific effect in all cases of tuberculosis. (2) This specific effect, commonly called 'the reaction,' varies greatly in its intensity, and undoubtedly bears some relation to the dose employed, cases of undoubted tuberculosis having, in several instances, failed to react to 0.001, 0.002, 0.003, and even 0.005 cubic centimètre of the fluid. (3) There is, however, no absolute relation between the dose and reaction, some cases having reacted violently to the smallest of these doses. (4) This difference does not depend upon the evident extent of the tubercular disease present, or on the organ affected, but upon individual susceptibility, which has not been at present defined. (5) It is therefore very important to commence with small doses; in children 0.001 cubic centimètre, or even 0.0005, should be used in all cases; in internal tuberculosis 0 001 cubic centimètre, and in lupus, glands, and joints not more than 0.005 cubic centimètre. (6) Before commencing treatment in cases of external tuberculosis evidences of internal tuberculosis should be carefully sought for. (7) The existence of hæmoptysis does not contraindicate the employment of the treatment, but we would urge caution under such circumstances. (8) No reaction follows after the continued employment of the same dose, but this tolerance is not acquired after a uniform number of injections. (9) The dose should be raised beyond 0.015 cubic centimètre until further experience has been gained. (10) All cases, after injection, must be kept under continued observation until the reaction has passed off, and under no circumstances should the treatment be permitted in out-patient practice. (11) So far as the experiments have been carried it cannot be affirmed that the curative influence of the local reaction has been proved, but direct observation has shown us that (*a*) lupus patches shrink, become paler, and present no appearance of growing nodules, even after a few days' treatment; (*b*) tubercular arthritis in the earlier stages shows less swelling, pain disappears, and movement of the joint becomes more free; (*c*) tuberculous glands diminish in size, sinuses dry up, and old scars become thinner and less adherent; (*d*) pulmonary phthisis in favourable cases undergoes improvement by absence of night sweats, diminution of cough and expectoration, reduction in number of tubercle bacilli, and increase of body weight. (12) We are not in a position to say anything definitely as to the risk of relapse. That there is such a danger may be easily believed, even if the most sanguine anticipations of the success of the method in curing existing tuberculosis are admitted, but at present it is too early to discuss this question."

---

(341) Koch's Treatment of Tuberculosis: Indications and Contraindications.

PROFESSOR SENATOR delivered a clinical lecture on Koch's treatment based on fifty-three cases under his own observation (*Berlin. klin. Wochenschr.*, December 10th). The cases represented a total number of 400 injections made over a period of three weeks. Senator thinks the treatment indicated in all cases in which it seems likely that the tissues killed by the injections will be eliminated easily; under this category come lupus, and tuberculosis of the larynx, nose, mouth, and intestine. With regard to the lung, good results can be expected only when the affection is recent in origin and slight in character. In tuberculosis of closed cavities there seems to be little scope for the method. The treatment is generally contraindicated in cases of nephritis, especially when complicated with dropsy, in cases of large pleuritic effusions, in extensive amyloid disease, and in cachexia or debility from whatever cause it may arise. It is absolutely contraindicated in cases of tuberculosis of the brain or its coverings, at any rate where ossification of the skull is complete; in such cases the effect of the injections would probably be to increase the already existing inflammation and œdema and perhaps to cause absorption of the tuberculous virus. According to Senator the intensity of the reaction bears no relation to the extent of the disease. He points out also that the reaction itself has a decidedly lowering effect on the patient, and may even cause loss of weight for two or three weeks. With regard to the curative effects of the remedy Senator expresses himself very guardedly. He notes however that in a case of laryngeal phthisis in which tracheotomy had been performed several weeks before, and in which accordingly the treatment could be tried under particularly favourable circumstances, very marked improvement followed the injections. The patient, who was in a state of great weakness owing to inability to swallow, was able to take food satisfactorily, and the swelling of the larynx diminished to such an extent that when the opening of the tube was closed he could breathe by the natural passage and expectorate through the mouth. With regard to the lungs, though Senator has as yet seen no instance of cure, he has met with marked amelioration of the symptoms in several cases, the *râles* becoming fewer, the cough and expectoration much diminished (the latter for example, from 50-70 to 5-10 grammes a day). The sputum was also much less purulent. As for the bacilli Senator has as yet seen no permanent diminution in their number, and though their shape was unquestionably altered in some cases, in others no difference could be seen beyond what is often seen in sputum discharged from old cavities.

---

(342) Koch's Treatment of Tuberculosis in Children.

AT a meeting of the Gesellschaft der Charité-Aerzte, on December 4th, Professor Henoch presented a communication on the results of the new treatment of tuberculosis as seen in children. He said he had tried it in eleven cases, the clinical observations extending over a period of fourteen days. The ages of the little patients were from 2 to 11 years, and the diseases from which they suffered were as follows: pulmonary tuberculosis (6 cases), lupus with vertebral caries (1), caries of the petrous portion of the temporal bone with chronic peritonitis (1), tuberculous meningitis in the last stage (1), scrofulosis (1), and spina ventosa (1). He began in all cases with injections of one-tenth of a milligramme. As no reaction followed this dose it was increased to two-tenths, and afterwards to three-tenths, this being the smallest dose which produced any reaction. The intensity of the reaction was, however, very variable, and did not appear to bear any definite relation to the age of the patient. Thus some of the younger children (aged from 2 to 3 years) did not seem to be in any way affected by an injection of three-tenths of a milligramme. This dose made the temperature of a boy, aged 8, with consolidation at the apex, rise to 38 4° C. In two children in whom tuberculosis was suspected, four-tenths of a milligramme sent the temperature up to 38.2° C., and caused great restlessness and prostration. A child 2½ years old, with tuberculous meningitis in the last stage, showed moderate reaction after each injection, three-tenths of a milligramme being first given, and the dose be-

ing gradually increased. In a child of the same age, with spina ventosa, a dose of three-tenths of a milligramme caused a reaction which lasted three days, the temperature reaching 39.0° C., and the respiration being quickened to 60 to 70 per minute, with great prostration and much swelling and redness of the affected part. A boy, aged 7, with pulmonary phthisis, required a dose of eighth-tenths of a milligramme before reaction could be produced. In the child, aged 4½ years, with caries of the petrous bone and chronic peritonitis, who had undergone scraping of the bone and paracentesis of the abdomen, two injections of four and five-tenths of a milligramme respectively, given at an interval of one day, caused redness about the wound over the petrous bone, and fresh effusion into the peritoneal cavity. The latter disappeared after a few days. In the case of the child with tuberculous meningitis, four injections (of three, four, five, and seven-tenths of a milligramme respectively) were given. The child died, and on *post-mortem* examination (made by Virchow) the brain and meninges were hyperæmic instead of pale, as they usually are from the pressure of the distended lateral ventricles. This shows, according to Henoch, that Koch's treatment is absolutely contraindicated in tuberculous meningitis, even in its earliest stages.

---

(343) Koch's Treatment of Tuberculosis: General Effects.

M. FERRAUD (*Rev. Gén. de Clin et de Thér.*, December 10th) says the general effects of Koch's remedy are similar to those of a muscular poison. The general prostration, the pains in the muscles, the feeling of faintness, the dilatation of the capillaries, all show that the vasomotor muscular system throughout the body is affected by the injection. The nervous symptoms that have been noticed in some cases—slight transient delirium, followed by more or less profound coma—might appear to suggest a poison acting on the medulla, but Ferraud thinks these phenomena can be explained by paralysis of the cerebral capillaries. The following conditions contraindicate the treatment in phthisis; extensive generalisation of the tuberculous lesion; adynamia or extreme weakness; marked tendency to hæmoptysis. An "ultra-febrile" character of the disease also contraindicates the remedy, or makes the greatest caution in using it necessary. Ferraud sums up with the remark that none of the effects hitherto observed seem to justify the belief that the "lymph" has a really curative effect.

---

(344) Koch's Treatment in Tuberculosis of the Air Passages.

AT a meeting of the Société Médicale des Hôpitaux on December 5th (*Rev. Gén. de Clin. et de Thér.*, December 10th), Dr. Cuffer, in speaking of the effects of Koch's remedy on tuberculosis of the respiratory passages, pointed out that before the pyrexia, indicating the occurrence of reaction, the temperature often fell below the normal point; this condition might last only a few minutes or a whole day. He explained it by the depressing effect of the injection on the circulation. At the beginning of the reaction there is always more or less dyspnœa, indicating congestion of the lungs. In a woman, aged 42, under the care of Professor Senator, in whom the injections had been made with all proper precautions, Cuffer saw all the symptoms of acute phthisis with high fever supervene. She died ten days after the commencement of the treatment. This clearly showed that the treatment had acted as a stimulus to the morbid process, which had been quickened into the most energetic activity. In three other cases the course of the disease was hastened in the same way. Attacks of congestion of the liver, kidney, and brain had also been observed. Dr. Cuffer had not seen with his own eyes any case in which diminution of the expectoration or night sweats, or amelioration of any kind, had taken place. According to him, the effect of the remedy is to produce congestion in the affected parts. Possibly this may be the starting point of favourable changes in the morbid process, "but up to the present they have not been able to cite a single fact in proof of it." On the other hand, the unfavourable changes and the accidents cannot be denied.

---

(345) Koch's Treatment in Leprosy.

ACCORDING to Dr. A. Rémond, special commissioner of the *Semaine Médicale* at Berlin (*Semaine Médicale*, December 10th), a patient presenting the characteristic signs of leprosy was shown by Dr. Max Joseph, at a meeting of the Berlin Medical Society on November 26th. He had a well-marked "leonine," countenance, but there was no ulceration of the face. He was treated with injections of Koch's fluid, and in a short time the chin and the nose became covered with little crusts very close together. Each of these scabs covered a tiny ulcer of about the size of a pin's head. The crusts were exactly like those which are formed on the surface of a lupus patch during the period of reaction. There was no fever or other sign of general reaction. The diagnosis of leprosy was confirmed by microscopic examination of a piece of skin excised from the chin a few days before the injections were begun.

---

(346) Koch's Treatment in Lupus.

PROFESSOR CORNIL has studied the effects of the injection of Koch's fluid on lupus patches (*Semaine Médicale*, December 10th). He states that on microscopical examination after an injection, an enormous quantity of lymph cells with an abundant secretion of serosity is seen. In the process of natural cure or after scraping, etc., what is observed is the production of a fibrous connective tissue, sometimes infiltrated with calcareous salts, which, so to speak, imprisons the tuberculous tissues. The injection of Koch's fluid produces around the tuberculous lesions the congestion which is seen at the beginning of the healing process, but it has still to be decided whether the further course of events will be a process of cicatrisation analogous to what takes place in natural cure. M. Cornil has determined for the present to combine injection of Koch's fluid with local injections of various antiseptic substances, especially iodoform solutions. One of the characteristics of tuberculous lesions is the blocking of the vessels with fibrinous coagula; this, according to Cornil, may be one reason why antiseptic agents introduced into the circulation have so little effect on the bacilli, which in fact they never reach. By injecting iodoform oil around the lupus nodules before Koch's fluid is used, there may be a chance of the antiseptic penetrating to the microbes during the congestive period of the reaction.

PHYSIOLOGY.

(347) On Muscular Fatigue.

TWO important researches on muscular fatigue by Professor Mosso, of Turin (*Du Bois-Reymond's Arch.*, 1890, Heft 1-2, p. 89) and some of his pupils have been made on man by means of a specially constructed instrument, the ergograph. The apparatus

is so arranged that the forearm and hand are fixed, except the middle finger, which can raise a weight working over a pulley. The height to which the weight is lifted is recorded graphically. The finger is moved rhythmically at a given signal. It seems that for a certain physiological condition of the system, the fatigue curve of each individual is fairly characteristic and constant, but that it varies with alteration of the conditions under which it is taken. It is usually stated that the fatigue curve is nearly a straight line; it may be so in man occasionally, but usually it shows a convexity directed upwards or downwards. The fatigue curves obtained by stimulating the muscles to contract by electrical stimuli are very similar to those obtained by voluntary contractions, so that the individual type of fatigue appears to depend upon peripheral and not upon central causes. Muscles, which are apparently exhausted and no longer raise a weight when stimulated electrically, may be made to do so by a volitional impulse, and those muscles that no longer respond to volitional impulses may be made to contract by electrical stimuli. Suppose a muscle to act voluntarily, during this time it does not recover so as to react to electrical stimuli, by which it was previously exhausted. If, however, the muscle be exhausted for voluntary stimuli and then be stimulated electrically, during this period it again becomes capable of being excited to contraction voluntarily. Apparently some factor has recovered itself in the meantime. This is obviously the central one, so that the nerve centres apparently also become fatigued during voluntary muscular contractions. Continued mental activity diminishes the muscular energy and increases the fatigue; and hunger, sleeplessness, and forced marching act in a similar manner. The peripheral fatigue in these cases seems to be due to the accumulation of poisonous products in the blood due to the muscular metabolism. A dog was nearly completely exhausted by working for twelve to eighteen hours on a treadmill. It was then bled, and its blood injected into another dog, with the result that the blood proved poisonous.

---

(348) On the Tonus of the Portal Circulation.

MANY points about the physiology of the portal circulation are still very obscure. We know that ligature of the portal vein in rabbits quickly causes a great fall of the blood pressure as measured in the carotid, and that the animals speedily die, and we also know that the capacity of the abdominal vessels is such that practically an animal may be bled into the blood vessels of its own abdomen, that is, the capacity of these vessels is such that they can, when dilated, contain nearly all the blood in the animal's body. Kronecker (*Centralblatt f. Physiol.*, No. 13, 1890), has measured the blood pressure in the portal system. He connected the gastric branch of the portal vein of a rabbit with a burette, and raised the level of the normal saline in the latter until the fluid just began to flow into the portal vein, which it did —the portal vein being open—under a pressure of 3 to 10 centimètres of fluid. If, however, the portal vein was closed, the pressure had to be raised to 40 to 60 centimètres, before any flowed into the portal vein, and if at the same time the abdominal aorta was closed at the level of the diaphragm, the water flowed in at a pressure of 15 to 20 centimètres. As soon as the animal died the pressure fell to zero. After ligature of the portal vein, the portal vein and its tributaries could accommodate a very large quantity of fluid (250 cubic centimètres); it is plain, therefore, that the portal system can accommodate itself to very large quantities of fluid, but it can also accommodate its capacity for relatively small quantities. By the colorimetric method of estimating the quantity of blood, it was proved that after closure of the aorta, massage of the intestines, and ligature of the portal vein, only 1 to 2 cubic centimètres of blood were found in the entire portal system, but when the portal vein was first closed and then the aorta ligatured, the amount of blood was 14 to 24 centimètres. Hence we must conclude that the intestinal vessels possess tonus to such an extent that they can diminish their capacity at least tenfold. The quantity of blood, contained in the tributaries of the portal vein, after ligature of the porta itself, is obviously not sufficient to cause fatal anæmia, but after this operation it is found that the blood within the liver itself is also excluded from the circulation, for the low carotid blood pressure which obtains after ligature of the portal vein does not fall any lower when the inferior vena cava is subsequently tied. As the quantity of blood in the liver is equal to that in the portal system, it is found that after ligature of the portal vein the quantity of blood withdrawn from the general circulation is equal to 2 per cent. of the body weight, an amount which in fact must be regarded as in itself dangerous to life.

---

(349) Some Recent Researches on Bile and its Functions in Digestion.

HERZEN, of Lausanne, some years ago had occasion to observe the process of digestion in the stomach in the case of a man with gastric fistula, and he found that, contrary to what is usually asserted, the passage of bile into the stomach did not interfere with the gastric digestion of coagulated albumen (*Centralb. f. Physiol.*, No. 10, August, 1890). It has, however, been found repeatedly in experiments with artificial digestion that bile retards or arrests the digestion of proteids. There seems, therefore, to be a fundamental difference between digestion in a glass vessel and the process as it occurs in the stomach. So far as we know, a bottle of red wine does not hinder or retard digestion when it is introduced into the stomach, but a very small quantity of a wine containing tannin arrests artificial gastric digestion. In the case of the stomach, the passage of bile from the duodenum into the stomach may render the pepsin inactive, but the latter is perhaps quickly renewed from the gastric mucous membrane. Dastre, Professor of Physiology at the Sorbonne in Paris (Rech. sur la Bile, *Arch. de Physiol.*, [5], II, 2, p. 315, 1890) has also experimented on the effect of bile on the digestion of living animals. If a dog weighing 9 or 10 kilos (20 to 22 lbs.) receives into its stomach, an hour before or after a meal, 100 to 250 grains of ox bile, the bile does not appear to produce any disturbance of digestion; only in the case of the large dose purgation may take place. The same is the case when the bile of dogs is injected. In the case of dogs with gastric fistula, if bile be introduced into the stomach at different times after food is taken, and the contents of the stomach be tested from time to time, even a quarter of an hour after the bile is introduced the gastric contents are acid, and contain pepsin and peptone. In this connection we may recall the experiments of Oddi (*Centralb. f. Physiol.*, 1887, p. 312), who made a fistula in dogs, so that all the bile which passed into the gall bladder was conducted directly into the stomach. He found that gastric digestion was not disturbed by the introduction of so much bile; the animals ate well and even gained in weight. It seems evident that in dogs, and even in man, the introduction of bile into the stomach does not cause vomiting or gastric disturbance, and does not interfere with digestion in the stomach. Much controversy has

taken place on the digestion of fats in the intestine. Cl. Bernard long ago showed that in rabbits—in these animals the pancreatic duct opens separately from the bile duct and low down in the duodenum—the bile alone, without the pancreatic juice, could not cause emulsification of the fats; at least the lymphatic vessels above the entrance of the pancreatic duct did not contain chyle, while below it in a digesting animal they were filled with chyle. Dastre, however, has shown that in dogs the pancreatic juice without the aid of the bile cannot cause emulsification of the fats. The experiments were so arranged that the bile was discharged into the lower part of the duodenum. After a fatty meal, the lymphatics above where the bile discharged, that is where the fat was subjected to the action of the pancreatic juice alone, contained only clear lymph, but 15 centimètres lower down, that is, where the bile discharged into the duodenum, the lacteals contained chyle. It would seem, therefore, that the bile does play an important part in the digestion of fats in the dog. In dogs in which all the bile is discharged externally, the lacteals remain clear and transparent, and do not contain chyle. In this connection we may refer to Mayo Robson's Observations on the Secretion of Bile in a Case of Biliary Fistula (*Proc. Roy. Soc.*, vol. xlvii p. 499, 1890). This observer comes to the conclusion, from long continued observation of his cases in the human subject, that the bile is chiefly excrementitious, that it probably assists in the absorption of fat, and that its presence in the intestine is not necessary for the digestion of such an amount of fat as is capable of supporting life and keeping up nutrition. In one case the fistula was open fifteen months. Indeed, increase in body weight may take place with the entire absence of bile from the intestines. The antiseptic action of bile is unimportant, and its supposed stimulating effect on the intestinal walls is not necessary for a regular action of the bowels. The average quantity secreted in twenty-four hours is about 30 ounces. As a matter of practical importance the author investigated the effect of drugs on the bile, chiefly those investigated by Rutherford in dogs — calomel, enonymin, rhubarb, podophyllin, carbonate of soda, iridin, turpentine, and benzoate of soda. The author finds that the "supposed cholagogues" investigated seem rather to diminish than increase the amount of bile excreted.

DERMATOLOGY.

(350) Neuro-traumatic Pemphigus.

KAPOSI (*Archiv f. Derm. u. Syph.*, Heft 6, 1890), describes a case of neuro-traumatic pemphigus occurring in a waitress aged 22. The patient had torn the fold of the nail of the right middle finger with an iron nail, and the wound was dressed with iodoform. Pustules appeared shortly afterwards on the dorsal surface of the middle finger, preceded by a burning sensation. Pustules later on developed on the back of the hand, inner side of wrist, and on the inner side of the upper arm, in which part pain was felt. The patient stated that at a certain place she felt pain and burning, and after two or three hours the part became bright red, extending over an area nearly as large as the palm of the hand, in the middle or on the margins of which white shiny urticarial protuberances and swellings formed. Within two or three hours bullæ formed, varying in size from a pea to a hen's egg, isolated and confluent, and filled with a clear serum. The larger bullæ burst, and formed scabs under the partially denuded corium, which was afterwards covered by normal skin, pigmented spots being left. Kaposi states that in this case the development of bullæ was always preceded by pain and burning, sometimes by a feverish attack, the eruption appearing several days later on the inner surface of the forearm, spreading to the upper arm, over the shoulder, on the right side of the neck, and on the fourteenth day for the first time there developed a group of bullæ on the front part of the left side of the neck, and on the same on the breast, shoulder, and back. During the following weeks bullæ appeared here and there—on the eyelid, wrist-joint, calf of the leg, etc. There is now present a fresh eruption of bullæ on the upper and lower lips, and and in different groups on the lower part of the thigh the bullæ are as large as a hen's egg. At short intervals similar eruptions had occurred up to the date of report (September, 1890). Microscopic investigation revealed the presence of the organism described by Lukasiewicz.

(351) The Etiology of Scleroderma.

EICHHOFF (*Archiv f. Derm. u. Syph.*, Heft 6, 1890) gives particulars regarding a case of scleroderma occurring in a man, aged 35. The expression of the face of the patient was heavy and apathetic, and the skin over the nose and cheeks was drawn somewhat tightly. The tip of the nose felt cold. The fingers of both hands in all the interphalangeal, and partly also the metacarpo-phalangeal, joints were bent and fixed in that position, and presented the appearance of claws. The nails of several of the fingers were partially mutilated and worn away, and under each nail there was situated, between the nail and its bed, a firm horny mass. The substance of the nail was, in some places, fissured and brittle. Under and around the nails there were many small scars, in several of which fresh ulcerations were present. The phalanges of the thumb and middle finger of the right hand were shortened, those of the remaining fingers being not abnormally short. The skin of the fingers, and as far as the middle of the hand, presented a smooth shining appearance, and was hard and tense. The fatty tissue had disappeared from under the skin, which felt very cold. The hands and fingers often perspired profusely. Sharp pains in the upper arm were from time to time experienced. The surface of the remaining parts of the body, with the exception of the toes of both feet, on which a similar process had been going on, was normal. Small portions removed from the different nails, when examined microscopically, were found to be studded throughout the whole nail substance with a fungus coinciding with the chorion Schoenleinii, and numerous ramified mycelia and small spores arranged in groups. The abnormal growths were removed from the nails, and the fingers bound up in a 10 per cent. pyrogallic acid ointment. This application was renewed three times a day, after the parts had been washed with a 5 per cent. salicylic soap, and the treatment continued for about ten days. Boracic ointment was then applied, and, after the ulcerations were cured and the black scurf caused by the pyrogallic ointment was removed, the treatment was still continued, the result being favourable.

(352) Psoriasis Gravis.

DR. LUCIANI (*Clinica Dermopatica di Genova*. 1889-1890; *Monats f. prakt. Derm.*, vol. xi, No. 9), has found that in skin affected with psoriasis leucocytes in a condition of karyokinesis abound in the cutis, and infers from this fact that in this disease the cutis vera is affected simultaneously with the epidermis.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of Middlesex.